

Colorimetric Determination of Anthrax Bacillus
Using a Modified Fujiwara Reaction

ABSTRACT

The invention allows for nearly real-time analysis of the anthrax bacillus in atmospheres based on the presence of pyridine-2,6-dipicolinic acid in the spores of the bacillus. The spores are captured on the interior wall of an expanded Teflon™ tube. A solution of gem polychlorinated hydrocarbon, such as chloroform, and a hindered organic base, such as tetrabutylammonium hydroxide, is then reacted with the spores. The resulting reaction is a modified Fujiwara reaction allowing for an absorbance or fluorescence analysis of the bacillus. The reaction, coupled with the use of the expanded Teflon™ tube, will allow for the creation of an instrument capable of automatically sampling and analyzing for the bacillus in atmospheres.